

FOREWORD

It was on many a rainy day in the exceptionally wet summer of 1969 that I used to walk up to the "Forschungsinstitut für Mathematik", an old building located some way from the main ETH building. I was on my way to meet Prof. Lawrence E. Payne, who was visiting for a year there, and to whom I had been introduced by Prof. Joseph Hersch in November 1968. My interest in eigenvalue problems had led me to J. Hersch, who informed me that L. Payne might have a topic for a PhD thesis. Then, in February 1969 he gave me an introduction in how to get bounds for the first eigenvalue of the elastically supported membrane, and this marked the beginning of my thesis. Some 34 years later I looked at the same problem again, which now constitutes my contribution to this volume. But this time, as a matter of course, I have more experience and a number of new contributions of Larry's at hand.

But let us now have a look at Larry's personal history. He was born on October 2, 1923, in Enfield, Ill., into a poor farming family. After finishing elementary school, he found his first job in a barber shop, where he had to clean the floor. But soon after this he got a job in a shoe store and, later on, was offered a permanent position. After two years at this job, he decided to join the military, serving first in the US army and then in the US navy in 1943. He was sponsored to study Mechanical Engineering at Iowa State University, where he graduated with a B.S. in 1946. He then worked as an engineer for Linde air products and realized that nobody in his group had a sufficient mathematical background. So he decided to learn more mathematics in night school at the University of Buffalo, and of course, got hooked on the subject. Consequently, he went to Iowa State University to study Applied Mathematics, obtaining his M.S. in 1948 and Ph.D. in 1950. Following a year as Assistant Professor at the University of Arizona he joined the newly formed Institute of Fluid Dynamics and Applied Mathematics at the University of Maryland. In these years from 1951 to 1965 he gained an international reputation in PDE's and Applied Mathematics. In 1965 he was appointed Professor of Mathematics at Cornell University, where he stayed until his retirement in 1994. During this time he also held several visiting positions: ETH Zurich, the University of Newcastle-upon-Tyne, the University of Glasgow, University College Dublin, the University of Virginia, the University of Tennessee, the

University of Delaware and the University of Wisconsin.

Among the fields to which he has made significant contributions are: isoperimetric inequalities, a-priori estimates, mean value theorems, maximum principles with many new applications, uniqueness results in linear elasticity and flow problems, Korn's inequalities, ill posed problems. His list of publications contains close to two hundred and fifty entries and is still growing.

Over the course of his career his mathematical achievements have brought him many honors and awards. He was awarded the Steele Prize of the American Mathematical Society in 1972 and the degree of a Doctor of Science (h.c.) by the National University of Ireland in 1990. He is a fellow of the American Academy of Mechanics and of the Royal Society of Edinburgh. He is a member of the editorial board of several leading journals. During his tenure at the University of Maryland and Cornell he directed 16 Ph.D. students, some of them contributed as authors to this volume.

Anyone who has had the privilege of collaborating with Larry on a paper will remember his modest way of contributing excellent ideas, and, especially, his generosity to young researchers, many of whom he has helped to get a good start in their career.

All that remains to be said was cited in a SIAM news article on Larry: "He has not only taught mathematics but has also set an example on how to live the life of the mind with honor, dignity and humility".

We all wish that for many years to come Larry will continue to make contributions to the world of mathematics.

René Sperb Zürich, July 2003